

## Aiken County Early Action Plan for the 8-Hour Ozone Standard

### **Background**

In 1997, the Environmental Protection Agency (EPA) revised the National Ambient Air Quality Standard (NAAQS) for Ozone from a one-hour standard to an 8-hour standard. This was done to reflect the latest understanding of the effects of ozone exposure and provide public health protection with adequate margin of safety. EPA will be designating areas as attainment (meeting the standard) or non-attainment (not meeting the standard) in April of 2004. This designation will be based on the most recent three years of monitoring data (i.e., 2001, 2002, 2003). The Department of Health and Environmental Control (DHEC) has an intensive monitoring network covering the state and routinely monitors for ozone during the months of April through October. This time period is often referred to as the “Ozone Season.” If an area is designated non-attainment, the Clean Air Act (CAA) requires states to revise their State Implementation Plan (SIP) outlining how the area will return to attainment within a certain time period. If EPA designates areas in South Carolina as non-attainment in April of 2004, a revision to the South Carolina SIP will be due no later than 2007. Additionally, once an area is designated as non-attainment, the CAA has specific requirements that must be implemented. These requirements affect industry, economic development, and transportation. One requirement, Non-attainment New Source Review sets out the level of emissions reductions required for new and modified industrial facilities. Another requirement of non-attainment areas is to coordinate local transportation and air quality planning to ensure that transportation plans, programs and projects are consistent with air quality goals. According to the CAA, transportation plans, programs, and projects cannot create new violations of the Federal air quality standards; increase the frequency or severity of existing violations of the standard; or, delay attainment of standards.

The above approach is commonly referred to as the “traditional” approach. While safeguards for areas to return to attainment are included, certain prescriptive requirements may not be appropriate for all areas designated non-attainment for the 8-hour ozone standard. As a result, EPA provided an option for areas that were meeting the one-hour standard to attain the 8-hour ozone standard by December 31, 2007, and obtain cleaner air sooner than currently federally mandated. This option offers a more expeditious time frame for achieving emissions reductions, while providing “fail-safe” provisions for the area to revert to the traditional SIP process if specific milestones are not met. EPA will move forward with the designation process (attainment or non-attainment) but will defer the effective date, thus the prescriptive requirements of non-attainment designations, provided all terms and conditions of an Early Action Compact (EAC) are being met.

Forty-five counties in South Carolina elected to participate in the development of an Early Action State Implementation Plan (EAP). Participants in the EAC include the county, DHEC and the EPA. All of these parties agree to work together to implement federal, state and local emissions control measures that will allow the non-attainment areas to attain the 8-hour ozone standard earlier and therefore avoid implementing costly prescriptive measures. The EAC requires that all counties submit a local Early Action Plan to DHEC by March 31, 2004.

Although our county is not a potential area to be designated non-attainment for the 8-hour ozone standard, other areas in South Carolina may be designated non-attainment. As air knows no boundaries, implementation of emission reduction strategies and support of federal and state rules and regulations will help to provide cleaner air sooner to citizens of South Carolina.

## **What is Ozone?**

Ozone is a gas that occurs both in the Earth's upper atmosphere and at ground level. Ozone is one of six criteria pollutants used by the EPA as an indicator of air quality. Depending on where ozone is found, it can be good or bad. Occurring naturally in the upper atmosphere, ozone acts as a shield from the sun's harmful ultraviolet rays. However, ground-level ozone is a concern during the summer months when the weather conditions are favorable for producing ozone. Ozone is formed by chemical reactions between volatile organic compounds (VOCs) and oxides of nitrogen (NOx) in the presence of sunlight. Ozone is a major ingredient of smog.

## **Ozone Health Effects**

Ozone can cause permanent damage to the respiratory system. Active children are at highest risk from ozone exposure because they often spend a large amount of time outdoors. Active adults of all ages who exercise or work outdoors have an increased risk of exposure to elevated levels of ozone. People with asthma or other respiratory diseases are particularly sensitive to ozone exposure.

## **Sources of NOx and VOCs**

NOx and VOCs come from emissions from the following sources: stationary, area, mobile and natural. Stationary sources include larger permitted industry and power plants. Area sources are small, stationary and non-transportation sources that collectively contribute to air pollution. Area sources include gas stations (emit NOx) and dry-cleaners (emit VOCs). Mobile sources are divided into two categories, on-road and off-road. The off-road mobile sources include trains, ships, boats, airplanes, lawn equipment, and construction equipment. On-road mobile sources include cars, trucks, and buses. Natural sources for VOCs are released from vegetation, mostly trees in South Carolina. Natural sources for NOx are very rare and include emissions from soil, lightning, and oceans.

## **Stakeholder Involvement**

Refer to the progress reports submitted every six months for information regarding the stakeholder process and a complete listing of the stakeholder meetings and public outreach initiatives.

## **Emission Reduction Strategies**

Through the development and implementation of this plan, local emission reduction strategies that are economically feasible and that make sense for the county will be implemented no later than April 2005. In doing so, these efforts should assist the state in achieving the 8-hour ozone standard by December 31, 2007, and maintaining the standard beyond 2012.

A number of federal control measures are in place and/or will be phased in over the next several years. These programs include the Tier II and Low Sulfur Gasoline and also the NOx SIP call. All of these programs have been developed to help areas attain air quality standards.

The state is also proposing new and/or modifications to regulations that will assist non-attainment areas. The State programs could include a regulation that would result in VOC and NOx reductions; modifications to the open burning regulations and a process to assure transportation plans, programs, and projects consider air quality goals.

Attachment 1 contains a list of emission reduction strategies that will be implemented by the county. While it may not be possible to determine emissions reductions for each of the strategies included, directionally sound strategies have been selected and the county anticipates the cumulative impact of adopting each of these strategies will assist in maintaining the standard.

## **Maintenance**

The county will continue to address strategies that will assist in long-term maintenance of the 8-hour ozone standard. DHEC will continue to provide the air quality monitoring necessary to determine attainment of the 8-hour ozone standard. Yearly, at the end of each ozone season, there will be a review and evaluation to determine the effectiveness of the strategies adopted. If necessary, additional emission reduction strategies may be adopted. Maintenance of the standard will depend upon the success of emission reduction strategies implemented as well as federal and state initiatives.

Early Action Compact Milestone – March 12, 2004  
Final Plan of Emission Reduction Strategies

Aiken County

Based on stakeholder consultation and taking into consideration resource and political constraints, the following control measures under consideration can be reasonably implemented. It is anticipated these measures under consideration will assist Aiken County in achieving and/or maintaining the 8-hour ozone standard by 2007.

Measure under Consideration	Description of measure (A more detailed description will be included in the Early Action Plan.)	Estimate of emission reductions (if available)	Proposed date for implementation	Geographic area and/or local government
Air Quality Contact	One person will be identified as the Air Quality Contact for Aiken County. At a minimum, this contact will be responsible for ozone education/outreach and dissemination of ozone forecast. Each participating industry and municipality will also have an Air Quality Contact	Not available	March 2003	Countywide
Support state-wide efforts	Aiken County will support the efforts of SC DHEC regarding statewide emission reduction strategies.	Not available	When Available	Countywide
Alternative Fuels	<ul style="list-style-type: none"> <li>- Switch Aiken County Transit Fleet to Bio-diesel.</li> <li>- Convert SCE&amp;G Power Plant from Coal Burning to Gas Turbine Generators.</li> <li>- Switch diesel vehicles to bio-diesel.</li> </ul>	Not available Not available	<ul style="list-style-type: none"> <li>- June 2002</li> <li>- 2002</li> </ul>	<ul style="list-style-type: none"> <li>- Transit service area</li> <li>- SCE&amp;G Aiken Power Plant</li> <li>- Aiken County Industries</li> </ul>
Type II Fuels	Use low-sulfur Type II fuels in all vehicles	Not Available	When Available in Aiken County	Countywide
Community Awareness and Education	Promote the Aiken County Early Action Plan at meetings where the public is invited. Issue press releases to the local media. SCE&G is promoting an energy conservation awareness program.	Not available	July 2003	Countywide
Commuter Choice Program	Promote transit as a mode of transportation to get to the workplace through employer incentives.	Not Available	May 2003	Transit Service Area

Intelligent Transportation Systems	Install ITS equipment along major routes within the urbanized portion of Aiken County that follows the guidelines of our Advanced Traffic Management System Master Plan.	Not Available	Master Plan completed May 2002.  Equipment installation post FY2007.	Urbanized area of Aiken County
Promote Multi-modal Land Use	Revise ordinances to promote bicycle and pedestrian facilities and establish minimum tree planting requirements.	Not Available	Aiken County ordinance revision started June 2003 (effective upon County Council approval and set effective date).	Countywide
Open Burning Ordinance	Ban or limit open burning within city limits.	Not Available	Implemented	City of Aiken City of North Augusta
Mid-day Carpooling	Encourage employees to carpool to lunch.	Not Available	2003	Aiken County Industries
Occupancy Sensors	Install workspace occupancy sensors to reduce energy consumption.	Not Available	2003-2004	Aiken County Industries
Reflective Surfaces	Paint exposed surfaces of building with reflective paint to reduce energy consumption.	Not Available	2003-2004	Aiken County Industries
High Efficiency Equipment	Purchase Energy Star products when appropriate.	Not Available	2003	Aiken County Aiken County Industries